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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/772,731

02/04/2004

Liao Youn-Chyuan

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08/14/2006

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EXAMINER

MICHALSKI, SEAN M

ART UNIT

PAPER NUMBER

3724

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/772,731	YOUN-CHYUAN, LIAO	
	<b>Examiner</b>	<b>Art Unit</b>	
	Sean M. Michalski	3725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 7-9 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 7-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to Chiu as having only a ferrule and peripheral bulge have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edens in view of Huang, Daniel (USPN 3,583,716) and Chiu. (where citation is omitted please refer to the office action of mail date 03/29/2006, or to the updated references cited sheet attached to this office action).

4. Regarding claim 7, Edens discloses a tool head fixer (figure 1) a shaft (23 figure 3) including a groove disposed in the front end (figure 3), a step shaped hole (figure 3 abutting spring 280 is the stepped portion of the hole) being perpendicular to the insertion groove and also in the front end (see figure 1). Edens discloses a connecting shaft section protruding from the rear of said shaft (figure 1, 22). Edens discloses that the groove in the front end is multi-angular (21 figure 1 is a groove with multiple surface angles). Edens discloses a t-shaped pressing bolt (26 figure 3) inserted inside the stepped hole of the shaft (see figure 3). Edens discloses a cylindrical reposition spring

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disposed on the pressing bolt (280 figure 3). Edens discloses a rotating socket (60 figure 3) pivotably disposed on the shaft (figure 3), and including a connecting hole (the hole which contains said shaft, figure 3) and an acentric groove (the camming surface 66 is an acentric groove). Edens discloses that the camming surface has a thicker part and a thinner part and when the socket is rotated the thicker parts press each bolt into engagement with the tool head, fixing it (column 2 lines 40-45). Also, Edens discloses that when the socket is rotated to the thinner side, the reposition spring will bias outwardly the pressing bolt allowing the tool head to be removed (column 2 lines 40-45; figure 3). Edens discloses that the socket is disposed on said shaft (figure 1). Edens discloses a first tool head including an insertion section (41 figure 6) capable of being inserted into the insertion groove (figure 1). It is inherent that a second tool head, identical to the first tool head may be provided. Edens discloses a tool head that may be selectively inserted into the multi-angular groove (see figure 1, 21—a multi-angular groove). Edens discloses a stopping groove (42 figure 6, may reasonably constitute a “groove”) which is capable of selectively receiving said pressing bolt, as described above, thus selectively “fixing” or holding immobile said second tool head to said shaft.

Edens does not explicitly teach the use of a “conical” reposition spring.

Huang teaches a conical spring (element 51) in another tool chuck assembly.

In the same field of invention it would have been obvious to one skilled in the art at the time of the invention to modify Edens by making the disclosed spring conical as taught

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by Huang. The motivation to combine is that conical springs allow for complete deformation as shown in figure 2 of Huang.

Edens does not explicitly teach an E-shaped locking groove or an E-shaped locking ring. In the current application the locking grooves and rings are used to retain the socket on the shaft. Edens does not explicitly teach a fixing hole.

Daniel discloses a tool chuck assembly for a saw blade, which retains the tool head by use of a pressing ball contained in an acentric camming sleeve (a "rotating socket" as per the current applicants preferred terminology). This socket is retained in the rear by a locking E-ring shown in a E-shaped locking groove (figure 6). Daniel further teaches an insertion section of a tool head having a fixing hole (60 figure 6).

In the same field of invention it would have been obvious to one skilled in the art at the time of the invention to modify Edens by providing a locking ring and groove as taught by Daniel. The motivation to combine is that the assembly shown in Daniel is simple and economical (column 1 lines 32-33).

It would have been obvious to one skilled in the art at the time of the invention to modify Edens by providing the tool head with a fixing hole, since doing so would allow for a more secure connection. The motivation to combine is found in Daniel which teaches that the shown configuration of pin with fixing hole is less susceptible to loosening by vibration (column 1 lines 37-39)

Edens does not explicitly teach a stopping ring on the front of the shaft disposed "in" the connecting hole of the socket. Chiu teaches a stopping ring disposed *in* the connecting hole of a socket (448 figure 4). This ring is used to retain a rotating socket (see 448 figure 4) of a tool head fixer.

In the same field of invention it would have been obvious to one skilled in the art at the time of the invention to modify Edens by having a retaining ring disposed in the rotating socket as taught by Chiu. The motivation to combine is that the socket retention assembly of Chiu is less complicated and easier to assemble than the assembly of Edens.

5. Regarding claim 9, Edens discloses that the pressing bolt head is round for engaging with said rotating socket (see figure 3). Their relationship is described as camming, or being slidingly engaged.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Edens in view of Huang, Daniel (USPN 3,583,716) and Chiu as applied to claims 7 and 9 above, and further in view of Parmley.

7. Edens in view of Huang, Daniel (USPN 3,583,716) and Chiu, as described above teaches every aspect of the claimed invention except that the pressing bolt include a conical part for selectively engaging with a first and second tool head. Edens discloses that the bolt have a semicircular section (at the tip) for selectively engaging with one tool

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head and inherently a second tool head may be provided identical in configuration of the insertion section.

Parmley teaches that having a tip section of a pressing bolt be conical is a well known, art recognized equivalent of the semi-spherical configuration shown in Edens. On pages 9-8 and 9-9 of Parmley many spherical (figure 10, 9-9), semi-spherical (figure 8, 9-9 shows a plunger with a semi-spherical tip), and conical (figures 1,2 and 3; 9-8) locking detents. These are seen to be different configurations that have the same function and may be selected from within a group of equivalence art recognized by the common heading "Retaining and Locking Detents".

### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

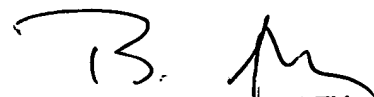
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean M. Michalski whose telephone number is 571-272-6752. The examiner can normally be reached on M-F 7:30AM - 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on 571-272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SMM

  
BOYER D. ASHLEY  
SUPERVISORY PATENT EXAMINER